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## ABSTRACT

The present invention relates to a test system for the identification and testing of active compounds which act on synaptic transmission (active compounds for treatment of neuronal diseases), which influence endo/exocytosis, which influence processing of proteins and in particular of active compounds which can be used for treatment of osteoporosis or Paget's disease, for treatment of neurological and neuromuscular diseases and other nerve diseases or as psychotropic pharmaceuticals. The invention furthermore relates to a genetically modified non-human mammal, in which one or more chloride channels from the group consisting of CIC-3, CIC-4, CIC-6 and CIC-7 are not expressed or are expressed non-functionally, and somatic cell lines which are derived from such an animal, and the use thereof for the identification and testing of substances which are suitable for inhibiting chloride channels, in particular CIC-3, CIC-4, CIC-5, CIC-6 and/or CIC-7.